

Antimicrobial characterization of silver nanoparticle-coated polyvinyl alcohol/nanochitosan surface by “touch test” method

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Manuscript received online 10 September 2018, accepted 10 October 2018

The objective of the present study was to fabricate polyvinylalcohol/nanochitosan mat through electrospinning technique followed by impregnation of silver nanoparticles. The silver impregnated mat was evaluated for antimicrobial activity against the pathogens *E. coli*, *Staphylococcus aureus*, *Pseudomonas sp*, for antibacterial and *Aspergillus flavus*, *Aspergillus niger*, *Aspergillus fumigatus* and *Mucor sp*, for antifungal activity respectively. The physico-chemical properties of the mat was characterized using advanced analytical techniques such as Fourier transform infrared spectroscopy (FT-IR) and X-ray diffraction studies (XRD). The preliminary studies supported that the silver nanoparticle impregnated mat exhibits good antimicrobial property with excellent biocompatibility which made them to plausible potential candidates for biomedical applications.

Keywords: Silver nanoparticle, nanochitosan, antimicrobial efficacy, pathogens, crystallinity.